

September 1989

# RESERVE TRAINING

## FIREX 88 Achieved Its Objectives but Missed Other Training Opportunities





**National Security and  
International Affairs Division**

B-236046

September 15, 1989

The Honorable Wayne Owens  
House of Representatives

Dear Mr. Owens:

As requested, we assessed the Army's FIREX 88 training exercise, conducted at Tooele Army Depot, Utah, and vicinity in June 1988. Specifically, we assessed whether exercise objectives were achieved at various command levels and what benefits were gained from FIREX 88, including whether it identified weaknesses in the Army's conventional capabilities. We briefed your staff on our preliminary findings in April 1989. This letter summarizes the results of our review, which are more fully described in appendix I.

The largest fighting unit of the U. S. Army is the corps. The principal elements of a corps include combat divisions, the corps artillery, a corps support command, and other specialized units. The Army currently has six corps. The corps artillery of the First United States Corps (I Corps)—headquartered in Salt Lake City, Utah—is the only corps artillery comprised primarily of Army reserve component units. Because of the large number of units comprising the I Corps artillery and its wide geographic dispersion, corps-level artillery exercises are conducted infrequently. FIREX 88 was designed to be a corps-level, live-fire, field artillery training exercise for I Corps' active and reserve artillery and support units. It integrated artillery, air, and combat service-support operations.<sup>1</sup> Major objectives of FIREX 88 were to exercise the I Corps Artillery headquarters' wartime command and control function; to mobilize, deploy, exercise, and redeploy brigades, battalions, and smaller units; and to exercise combat service-support functions.

**Results in Brief**

FIREX 88 was beneficial in that it achieved its major objectives and provided valuable training to exercise participants. Another benefit of the exercise was the identification of weaknesses in the Army's conventional capabilities in the areas of tactical communications and logistical support planning and operations. Though the exercise was successful overall, exercise planners did not maximize training opportunities. Originally designed to exercise only I Corps Artillery units, FIREX 88 grew beyond its originally intended scope, and about half of the troops at

<sup>1</sup>Combat-service support includes medical, maintenance, supply, and transportation services.

FIREX 88 were from units not expected to operate with the I Corps Artillery in wartime. The size and complexity of FIREX 88, along with concerns about safety and environmental damage, caused Army officials to limit opposing forces play. This decision, coupled with a lack of battlefield simulation, caused participants to miss a number of training opportunities.

## Principal Findings

We found that FIREX 88 had successfully achieved its major objectives by (1) bringing together more than 15,000 soldiers in an integrated live-fire exercise, (2) mobilizing and deploying units to Utah from 20 states, and (3) exercising combat service-support operations. In addition, FIREX 88 was instrumental in pointing out weaknesses in the Army's conventional capabilities that might not have been identified by other types of training exercises. Combat service-support units, for example, experienced significant operational and equipment problems. Also, the corps artillery and support units had problems in communicating effectively.

Although FIREX 88 was a beneficial training exercise, it could have been more effective if it had taken advantage of other training opportunities. Initially, FIREX 88 was conceived as an exercise for only I Corps Artillery units. During the 3-year planning process, however, the scope and size of the exercise grew beyond the capabilities of the I Corps Artillery headquarters that planned it. A corps artillery headquarters specializes in fire support planning and coordination. Unlike corps or higher level headquarters, it does not possess the expertise to integrate maneuver, combat-support, and combat service-support elements in exercises of the size and scope of FIREX 88, while maintaining control and safety. Consequently, factors such as the following, which could have made the exercise more effective, were lacking:

- Training in offensive and defensive tactics was lacking because the exercise involved only limited opposing forces and battlefield simulation.
- Communications and combat service-support operations were not adequately planned and executed.

Exercise costs were not accumulated in a manner that allowed us to conduct a meaningful analysis of benefits versus costs. However, participating commanders, staff officers, and soldiers told us that FIREX 88 had provided more valuable training than normal annual training periods

and other exercises because FIREX 88 involved deployment by rail and air and it was a large-scale, live-fire exercise.

## Agency Comments

The Department of Defense (DOD) generally agreed with our findings (see app. III). DOD did not agree that the staff who planned the exercise lacked expertise, citing some planning and execution assistance by other higher level Army headquarters organizations. However, officials from two of these organizations told us that they had not assumed significant planning and execution responsibilities.

Our objectives, scope, and methodology are detailed in appendix II.

We are sending copies of this report to the Chairmen of the House and Senate Committees on Armed Services and the House and Senate Committees on Appropriations; the Director, Office of Management and Budget; and the Secretaries of Defense and the Army. Copies will also be made available to other interested parties upon request.

Please contact me at (202) 275-4141 if you or your staff have any questions concerning this briefing report. GAO staff members who made major contributions to this report are listed in appendix IV.

Sincerely yours,



Richard Davis  
Director, Army Issues

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## Abbreviations

DOD	Department of Defense
GAO	General Accounting Office



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# FIREX 88 Achieved Objectives but Missed Other Training Opportunities

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## Training Philosophy and Standards

- Training standards are the same for active and reserve components.
- Units that will fight together must train together.
- To be effective, training must be realistic.

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**Appendix I  
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The Army's total force policy relies on active and reserve units' training to the same standards to allow them to mobilize, deploy, fight, and win. A fundamental principle of training is that successful armies train as they intend to fight and fight as they are trained. The Army's training doctrine recognizes that units that will be required to fight together in wartime must train together in peacetime to maximize their combat readiness. Army doctrine further recognizes that peacetime training exercises must be structured so as to provide an environment that realistically simulates battle conditions.

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## **Exercise Objectives**

- For higher command (brigade, group, and higher) levels: to command and control units that would be assigned to those levels in combat.
- For lower command (battalion and lower) levels: to mobilize, deploy, and train for wartime missions and redeployment.
- To conduct a live-fire exercise integrating air and ground fire support systems.
- To exercise combat service-support functions.
- To refine procedures for tactical communications.

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**Appendix I**  
**FIREX 88 Achieved Objectives but Missed**  
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FIREX 88 was conceived and planned by the Commander and staff of I Corps Artillery. He told us that most exercises conducted by the Army focus on smaller units—from the brigade level down. Larger exercises frequently do not allow combat service-support units to exercise their wartime missions, provide only limited tactical training and maneuver, and in most cases do not incorporate live-fire phases. Therefore, FIREX 88 planners developed an exercise scenario to provide these types of training to a large number of I Corps Artillery and corps support command units.

The major objective of FIREX 88 for higher command levels was to exercise the I Corps Artillery headquarters' wartime command and control function. For lower command levels, objectives were to mobilize, deploy, exercise, and redeploy brigades, battalions, and smaller units.

In addition, FIREX 88 was to exercise combat service-support operations and refine I Corps' procedures for (1) tactical communications and (2) integration of artillery and air strike capabilities in a live-fire exercise. According to the exercise commander, FIREX 88 was also intended to renew an appreciation among senior Army leaders of the importance of including fire support training in large exercises.

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- Benefits of FIREX 88**
- FIREX 88 achieved its major objectives.
  - FIREX 88 emphasized mission-essential collective training.
  - FIREX 88 was considered a valuable training experience.

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**Appendix I**  
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FIREX 88 achieved its major objectives. It brought together more than 15,000 soldiers, primarily from the reserve components, in an integrated live-fire exercise and provided command and control opportunities to corps, corps artillery, and corps support command levels. Participating units mobilized, deployed, and redeployed successfully over great distances. Combat service-support units received challenging training.

FIREX 88 provided training to more than 100 active and reserve component units of the Army and the Air Force. A number of participating commanders and staff officers told us that the training value of FIREX 88 was superior to that of normal annual training periods and other exercises. For example, they were able to practice long distance deployment by rail and air, operate in desert terrain, and conduct live fire for an extended period of time.

FIREX 88 emphasized the collective training of the I Corps Artillery and combat service-support units and provided opportunities for many I Corps artillery and support units to practice individual wartime missions in conjunction with other I Corps units. The role of Air Force elements in FIREX was to provide close air support, battlefield air interdiction, reconnaissance, and forward air control.

Army officials told us that FIREX 88 was the largest live-fire artillery exercise held in the United States since World War II. In summarizing the results of FIREX 88 for senior Army leaders, the exercise commander noted that his objective of renewing an appreciation for the need to include artillery fire support training in exercises was met.

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**Problems in Logistical Support Planning and Operations**

- Combat service-support units experienced operational problems.
- Some support units had old equipment.

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**Appendix I**  
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One of the benefits of FIREX 88 was that it pointed out weaknesses in the Army's conventional capabilities that might not have been identified by other training exercises. In the judgment of some commanders who received combat-service support during FIREX 88, neither the corps support command element nor the corps material management center possessed sufficient experience to properly plan or manage transportation, supply, and maintenance support operations. Moreover, some participating units did not rely on the corps support command's systems for supply and maintenance operations. Instead, they brought their own mechanics and supplies to repair and sustain equipment, functions intended to be performed by higher level organizations. The Department of Defense (DOD) acknowledged that exercises such as FIREX 88 are likely to highlight shortcomings in corps support elements and indicated that it does not expect that commands and units will be fully capable of executing corps level operations until they have had the opportunity to train at that level.

Also, the use of transportation assets was not always properly planned or coordinated with military police and other supporting units. For example, improper scheduling of transportation to pick up ammunition caused major traffic jams at the ammunition supply point, resulting in firing units going without scheduled ammunition for a period of up to 8 hours, causing live fire to be halted.

Some support units had old equipment for which parts were difficult to obtain. For example, bath and laundry units and field kitchen equipment could not be adequately maintained.

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**Problems in  
Communicating  
Effectively**

- The corps artillery and support units had numerous communications problems.
- Agency comments and our evaluation.

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**Appendix I**  
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Another equipment problem experienced during FIREX 88 involved aging, incompatible, and insufficient communications equipment, which disrupted exercise operations and logistical support. Communications were also hampered because planners had not provided enough telephone lines, radio networks, radio operators, or repair and maintenance elements. Participants had problems communicating over long distances and in mountainous terrain. Also, planners and participants had not anticipated the adverse effects of the desert environment on communications equipment. Many radio sets were made inoperable by the hot, dusty conditions.

DOD disagreed with a statement in our draft report that the corps artillery and support units had been unable to communicate effectively, citing the I Corps Artillery's ability to coordinate fire support of Army and Air Force elements. We have clarified the report to recognize that, while exercise participants were able to communicate, they had problems in doing so. The inadequacy of tactical communications throughout FIREX 88 was a major point made by participating elements in after-action reports and in their discussions with us.

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## **Lack of Planning Expertise**

- FIREX 88 was planned by the I Corps Artillery.
- FIREX 88 was originally intended for only I Corps artillery units.
- The scope of FIREX 88 and the number of participants grew dramatically during the planning period.
- The exercise outgrew the capabilities of its planners at the I Corps Artillery.
- Agency comments and our evaluation.

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**Appendix I**  
**FIREX 88 Achieved Objectives but Missed**  
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FIREX 88 was originally conceived as an exercise for I Corps artillery and selected support units only. According to the exercise commander, to gain wider participation, he advertised the exercise and made it available to nonaligned units. As other units learned about the training opportunities FIREX 88 would provide and obtained I Corps Artillery's approval to participate, the scope of the exercise and the number of units and individuals participating grew dramatically over the 3-year planning period. Almost half of the soldiers participating in FIREX 88 were from units that were not intended to be aligned with the I Corps Artillery in wartime.

According to Army officials, a corps artillery staff specializes in fire-support planning and coordination and is normally responsible for planning only the activities of its own units. It does not possess the expertise required to plan and conduct corps-level offensive and defensive maneuver and combat service-support operations. Moreover, it is not designed or intended to plan or conduct exercises of the size, scope, and complexity of FIREX 88. As it grew into a major exercise, planning responsibilities for FIREX 88 were not elevated to a higher level of command.

DOD did not agree that the staff planning the exercise lacked expertise, stating that the I Corps, the Sixth United States Army, and Utah Adjutant General staffs had provided some planning and execution assistance. We agree that the Utah Adjutant General staff provided planning assistance. We did not criticize the corps artillery staff's expertise in fire support, mobilization, and deployment. Our criticism dealt with the absence of expertise to plan and conduct corps-level offensive and defensive maneuver and combat-support operations. Officials at Headquarters, Sixth United States Army, said that their role had been limited to finding the right types of units to participate and to providing personnel and equipment mobilization coordination. Neither they nor the I Corps staff had assumed significant planning and execution responsibilities. Active Army readiness experts told us that the staffs of I Corps and the Sixth Army should have assumed greater responsibilities for planning at earlier stages of the process.

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**Weaknesses in**  
**Execution**

- Opposing forces play was minimal.
- The exercise was lacking in tactical realism.
- Some units that were required to support FIREX 88 administratively received little or no tactical training.
- Agency comments and our evaluation.

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**Appendix I**  
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The FIREX 88 commander was concerned about conducting a safe exercise and maintaining control. Planners did not have the expertise to design an exercise that included maneuver, live fire, and combat-service support while maintaining control and safety. Therefore, planners restricted opposing forces play and tactical maneuver. They were also restricted in using public and Army-controlled land because of concerns about environmental damage.

A special forces company provided the only opposing forces play during FIREX 88. As a result, the I Corps Artillery and combat service-support units did not have the incentive to plan or conduct realistic defensive and counteroffensive tactical operations. For example, two artillery units we visited had not emplaced their guns as would be required in combat or established defensive perimeters for them. Had larger maneuver elements been included, they could have functioned as opposing forces to stimulate tactical training.

Despite safety and environmental concerns, FIREX 88 could have provided more realistic training by incorporating battlefield simulation. Planners at corps level and higher have the expertise to design exercise scenarios that would have required units to establish or simulate proper defensive positions, emplace wire and other obstacles, correctly position machine guns and other weapons, develop reaction plans, and practice nuclear, biological, and chemical defenses. These types of activities could have been conducted without compromising exercise control or safety.

Some units were selected to support FIREX 88 administratively and were not included in the exercise play. Consequently, these units received no significant wartime mission training. For example, combat engineer units were used to prepare roads and other facilities prior to and after the exercise instead of performing these functions as part of the exercise scenario. Except for attack helicopter elements, Army combat aviation units were used primarily to transport visitors and observers, instead of taking part in tactical play. Ammunition and fuel resupply was conducted under administrative rather than tactical conditions.

In our draft report, we concluded that the participation of maneuver elements such as armor, cavalry, and infantry units would have made the exercise more effective by providing these elements with an opportunity to practice artillery request procedures and to see the value of friendly artillery fire on ground combat operations. We agree with DOD

that a corps artillery does not respond directly to fire missions originating from maneuver elements, and we have deleted this conclusion from the report.

We concluded that the addition of opposing force units larger than the single special forces company that assumed that role during FIREX 88 would have improved tactical realism and increased training opportunities. DOD stated that the inclusion of larger opposing force units would have been incompatible with Army and Air Force live-fire training. We continue to believe that, in accordance with Army training doctrine, the addition of larger opposing force units, such as infantry battalions, would have enhanced the opportunity to simulate realistic battlefield conditions while stimulating tactical defensive training. The addition of this type of unit should not have interfered with live-fire training or degraded safety. For example, they could have simulated attacks, with blank ammunition, against headquarters and combat service-support elements not involved in actual live-fire training.

DOD agreed that Army units should train under realistic conditions but stated that environmental limitations and climatic conditions sometimes preclude total wartime simulation. Our report acknowledged the land use restrictions placed on exercise planners. However, we believe that innovative simulations could have been conducted if appropriate planning expertise had been available. For example, defensive positions could have been constructed with sandbags and other materials. Engineer tape could have been used to simulate wire obstacles. Units could have been required to simulate emplacement and removal of mine fields. Also, enemy artillery fire could have been simulated, requiring frequent, rapid displacement of exercise participants.

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**Appendix I**  
**FIREX 88 Achieved Objectives but Missed**  
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**Exercise Costs**

- Many costs were not accumulated.
- The costs and benefits of FIREX 88 cannot be compared.

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FIREX 88 was not centrally funded by the Army. Instead, funds were provided by a number of sources, such as the National Guard Bureau; the Office of the Chief of Army Reserve, I Corps; and individual units. As many units used FIREX 88 as their annual training periods, they used annual training money already provided to finance their participation in the exercise. Additional costs, such as those incurred for travel, transportation, and ammunition, were not accumulated by all participants. In the absence of this data, an analysis of exercise costs versus benefits is not possible.

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# Objectives, Scope, and Methodology

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## Objectives

- To determine the objectives of FIREX 88.
- To determine the benefits of FIREX 88, including whether it pointed out weaknesses in the Army's conventional capabilities.

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## Scope and Methodology

- Review of various units' assessments of the exercise and interviewing of officials from the Departments of Defense and the Army.

The objectives of this review were to

- assess whether exercise objectives at various command levels were achieved;
- determine the benefits gained from FIREX 88, including whether it identified weaknesses in the Army's conventional capabilities; and
- determine the cost of the exercise.

To accomplish these objectives, we reviewed assessments of the exercise from nearly one-half of the 100 participating units and interviewed officials from the

- Office of the Secretary of Defense and
- Headquarters, Forces Command; Sixth Army; I Corps; I Corps Artillery; and 19 active Army and reserve component units at brigade and lower levels of organization.

We did not compare FIREX 88 to other exercises that have been conducted by other active and reserve components.

Our review was performed from January to June 1989 in accordance with generally accepted government auditing standards.

# Comments From the Department of Defense

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



RESERVE AFFAIRS

ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

11 JUL 1989

Mr. Frank C. Conahan  
Assistant Comptroller General  
National Security and International  
Affairs Division  
U.S. General Accounting Office  
Washington, DC 20548

Dear Mr. Conahan:

Enclosed is the Department of Defense (DoD) response to the General Accounting Office (GAO) Draft Report entitled "Reserve Training: FIREX '88 Achieved Its Objectives But Missed Other Training Opportunities," dated June 1, 1989, (GAO Code 393333) OSD Case 8015.

FIREX '88 was a tremendous success. It gave a large number of players the opportunity to plan, mobilize, deploy, and execute their training plans under a wartime scenario. The "Lessons Learned" and the GAO findings will be incorporated into the development of future exercises.

The DoD generally agrees with most of the findings in the above mentioned report. The DoD believes the report addressed a number of very important issues concerning the planning and execution of large joint Service training exercises. A need exists for a training area large enough to introduce sufficient maneuver elements to provide opposing forces play, more realistic air strikes and for compatible joint communication systems like the Army's Mobile Subscribers Equipment.

The DoD appreciates the opportunity to comment on the draft report.

Sincerely,

Stephen M. Duncan

Enclosure:  
As Stated

GAO DRAFT REPORT - DATED JUNE 1, 1989

(GAO CODE 393333) OSD CASE 8015

"RESERVE TRAINING: FIREX '88 ACHIEVED ITS OBJECTIVES BUT MISSED  
OTHER TRAINING OPPORTUNITIES"

DEPARTMENT OF DEFENSE COMMENTS

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FINDINGS

o FINDING A: Army Training Doctrine. The GAO explained that the Army total force policy relies on active and reserve units training to the same standards to allow them to mobilize, deploy, fight, and win. The GAO noted that a fundamental principle of training is that successful armies train as they intend to fight and fight as they are trained. The GAO pointed out that the Army's training doctrine recognizes that units that will be required to fight together in wartime must train together in peacetime to maximize their combat readiness. The GAO also emphasized the Army training doctrine recognizes that peacetime training exercises must be structured so as to provide an environment that is as realistic as possible and simulates battle conditions.

(p. 1, pp. 6-7/GAO Draft Report)

DoD RESPONSE: The DoD concurs. FM 25-100, Training the Force, dated Nov 88, requires active and reserve units to train as they will fight whenever feasible. FM 25-100

Now on pp. 6-7.

states, "The goal of combat level training is to achieve combat level standards. Every effort must be made to attain this difficult goal. Within the confines of safety and common sense, leaders must be willing to accept less than perfect results initially by integrating smoke, noise, simulated NBC, battlefield debris, loss of key leaders, cold weather, and other realistic conditions into training. Leaders must demand this type of realism in training and seize every opportunity to move soldiers out of the classroom into the field, to fire weapons, maneuver as a combined arms team, incorporate protective measures against enemy actions, and include joint and combined operations when possible."

o FINDING B: FIREX '88 Exercise Objectives. The GAO observed that FIREX '88 was conceived and planned by the Commander and staff of I Corps Artillery. According to the GAO, I Corps officials stated that most exercises conducted by the Army focus on smaller units--from the brigade level down. The GAO was advised that larger exercises frequently do not allow combat service-support units to exercise their wartime missions, provide only limited tactical training and maneuver, and in most cases, do not incorporate live-fire phases. The GAO explained that FIREX '88 planners developed an exercise scenario to provide these types of training to a large number of I Corps Artillery and Corps Support Command units.

The GAO described the major objective of FIREX '88 for higher command levels was to exercise the I Corps Artillery headquarters wartime command and control function. The GAO further described that the major objective for lower command levels was to mobilize, deploy, exercise, and redeploy brigades, battalions and smaller units.

The GAO noted that, in addition, FIREX '88 was to exercise combat service-support operations and refine I Corps' procedures for (1) tactical communications and (2) integration of artillery and air strike capabilities in a live-fire exercise. The GAO also observed that FIREX '88 was intended to renew an appreciation among senior Army leaders of the importance of including fire support training in large exercises. (p. 1, pp. 8-9/GAO Draft Report)

DoD RESPONSE: The DoD concurs. The goals and objectives of FIREX '88 were definitely met. The training accomplished at all levels was an extremely valuable tool to build future plans and procedures.

o FINDING C: Benefits of FIREX '88. The GAO found that FIREX '88 achieved its major objectives by bringing together more than 15,000 soldiers, primarily from the Reserve components, in an integrated live-fire exercise and providing command and control opportunities to corps, corps artillery, and corps support command levels. The GAO observed that participating units mobilized, deployed, and redeployed successfully over great distances. The GAO further observed

that combat service support units also received challenging training.

The GAO pointed out that FIREX '88 provided training to more than 100 Active and Reserve component units of the Army and the Air Force. According to the GAO, a number of participating commanders and staff officers stated that the training value of FIREX '88 was superior to that of normal annual training periods and other exercises. For example, the GAO pointed out that units were able to practice long distance deployment by rail and air, operate in desert terrain, and conduct live-fire for long periods of time.

The GAO noted that FIREX '88 emphasized collective training of the I Corps Artillery and combat service-support units and provided opportunities for many I Corps artillery and support units to practice individual wartime missions in conjunction with other I Corps units.

The GAO indicated that the role of the Air Force elements in FIREX '88 was also to provide close air support.

The GAO referenced statements by Army officials that FIREX '88 was the largest live-fire artillery exercise held in the United States since World War II. The GAO reported that the exercise commander also included in his summary for senior Army leaders that the objective of renewing an appreciation for the need to include artillery fire support training in exercises was met. (pp. 2-3, pp. 10-11/GAO Draft Report)

Now on pp. 1-2, 10-11.

DOD RESPONSE: The DoD concurs. As a result of FIREX '88 the Army and Air Force recognize the need for more exercises of this level to provide Services the training opportunities for large scale participation. The in-depth After Action Reports and Lessons Learned written by all major players during and after FIREX '88 will become the planning, training, and execution documents to build future exercises. The training mistakes made in the exercise are the positive learning experiences the entire exercise was intended to produce. As a result, FIREX '88 will become a valuable training tool for the future.

o FINDING D: Lessons Learned From FIREX '88. The GAO reported that one of the benefits of FIREX '88 was that it pointed out weaknesses in the Army's conventional capabilities that might not have been identified by other training exercises. The GAO observed that most commanders receiving combat service support during FIREX '88 believed that neither the Corps Support Command element nor the Corps Material Management Center were sufficiently trained to properly plan or manage transportation, supply, and maintenance support operations. According to the GAO, some participating units did not rely on the Corps Support Command systems for supply and maintenance operations. The GAO noted that, instead, these units brought their own mechanics and supplies to repair and sustain equipment, which was the function of higher level organizations. (pp. 2-3, pp. 12-14/GAO Draft Report)

Now on pp. 1-2, 12-13.

**Appendix III**  
**Comments From the Department of Defense**

DOD RESPONSE: The DoD partially concurs. FIREX '88 was a beneficial training exercise for the Army in which valuable lessons were learned by participants and units were provided the opportunity to improve wartime readiness. The DoD disagrees with the GAO statement that neither the Corps Support Command element nor the Corps Materiel Management Center were sufficiently trained to properly plan or manage transportation, supply, and maintenance support operations. The I Corps Artillery commander stated that the Corps Support Command provided excellent planning and execution. Sixth U.S. Army rated combat service support as an exercise strong point. The exercise did provide an unusual opportunity for the Corps Service Support Command and units to train in a corps operation. Training exercises like FIREX '88 are designed to stress the capabilities of the corps support elements and shortcomings are expected. The identification and correction of shortcomings are the products of any training exercise. The DoD does not expect that commands and units will be fully capable of executing corps level operations until they have had the opportunity to train at that level. FIREX '88 provided that opportunity.

See comment 1.

See comment 2.

The DoD disagrees with GAO's statement that corps artillery and support units were unable to communicate effectively. The I Corps Artillery commander stated that the signal brigade provided excellent support. I Corps Artillery's ability to coordinate the fire support of Army and Air Force

elements demonstrated its ability to communicate. The DoD does agree that corps level tactical communication systems need improvement, because communication problems did exist during the exercise. The Army is currently fielding (within reserve and active divisions and corps) the Mobile Subscriber Equipment (MSE) system and new tactical radios to enhance corps level communications.

o FINDING E: Exercise Planning. The GAO observed that FIREX '88 was originally conceived as an exercise for I Corps Artillery units only, but I Corps Artillery headquarters advertised the exercise and made it available to non-aligned units to gain wider participation. The GAO noted that as other units learned about the training opportunities FIREX '88 would provide and obtain I Corps Artillery approval to participate. The scope of the exercise and the number of units and individuals participating grew dramatically over the 3-year planning period. The GAO pointed out that almost half of the soldiers participating in FIREX '88 were from units that were not aligned with the I Corps Artillery in wartime. The GAO reported that to a Corps Artillery staff specializes in fire support planning and coordination and is normally responsible to plan only the activities of its own units. The GAO explained that the corps artillery staff does not possess the expertise required to plan and conduct corps level offensive and defensive maneuver and combat service support operations. The GAO further stated that the

Now on pp. 1-2, 16-17.

artillery staff is not designed or intended to plan or conduct exercises of the size, scope, and complexity of FIREX '88. The GAO concluded that although FIREX '88 grew into a major exercise, planning responsibilities were not elevated to a higher level of command. (pp. 2-3, pp. 15-16/GAO Draft Report)

DOD RESPONSE: The DoD partially concurs. The DoD agrees that the scope of the exercise and the unit troop list grew during the 3-year planning period. We further agree that corps artillery staffs are not designed nor do they normally plan and conduct exercises of the scope and complexity of FIREX '88. The DoD does not agree that the staff planning the exercise lacked expertise. The primary objective of the exercise, as discussed previously, focused on fire support, mobilization, and deployment--all functional areas in which the I Corps Artillery staff have considerable expertise. Some assistance was provided by I Corps fire support personnel to help make the scenario used more detailed and realistic. Additionally, some administrative and support planning assistance was provided by 6th US Army and the Utah Adjutant General. The DoD agrees that planning for integration of combat service support could have been improved. This lesson learned was acknowledged in After Action reviews and should help improve future exercises of this scope and complexity.

o FINDING F: Weaknesses in Planning and Execution:  
Maneuver Elements Were Not Included. The GAO observed that about half of the units that participated in FIREX '88 did not to have a wartime affiliation with I Corps. Yet, the GAO found that maneuver elements (such as armor, cavalry and infantry), which the I Corps Artillery must support in combat, were not included in the exercise. The GAO pointed out that, by omitting maneuver elements and not effectively simulating them in FIREX '88, the I Corps Artillery was not exercised to respond to fire missions originating from maneuver elements, as it would do in combat. In addition, the GAO concluded that, as a result of their omission, maneuver elements of the I Corps did not have an opportunity to practice artillery request procedures or to see the impact and value of friendly artillery fire on ground combat operations. (pp. 2-3, pp. 17-18/GAO Draft Report)

Now on pp. 1-2, 18-20.

DOD RESPONSE: The DoD nonconcur. The DoD disagrees with the GAO conclusion that maneuver elements should have been included in FIREX '88. The major objective of FIREX '88 was fire support coordination between the Corps Artillery, attack helicopters, and U.S. Air Force tactical air support. By Army doctrine, I Corps Artillery provides general support fires to I Corps and re-enforcing fires to Division Artillery units, but it does not directly respond to fire missions originating from maneuver elements. The inclusion

See comment 3.

of maneuver divisions and an armored cavalry regiment with appropriate opposing force play would have been incompatible with the exercise objectives for the following reasons: (1) FIREX '88 was a joint Army and Air Force live fire exercise and opposing forces could not be played realistically; (2) there was insufficient maneuver area for an entire corps to exercise by Army doctrine; (3) there were insufficient funds to exercise an entire Corps; and (4) an attempt to accomplish too many exercise objectives in a short period of time would have been counter productive to accomplishing the mission essential tasks selected by the commander.

The National Training Center provides the only opportunity for heavy maneuver battalions and brigades to train in a realistic doctrinal force-on-force environment according to realistic time-distance factors. The Army does not currently have maneuver training areas available to realistically exercise divisions and corps.

o FINDING G: Weaknesses in Planning and Execution: Opposing Force Play was Minimal. The GAO found that a special forces company provided the only opposing forces play during FIREX '88. The GAO concluded, as a result, that the I Corps Artillery and combat service support units did not have the incentive to plan or conduct realistic defensive and counteroffensive tactical operations. For example, the GAO pointed out that two artillery units it

Now on pp. 2, 18-20.

visited did not emplace their guns, as would be required in combat, or establish defensive perimeters for them. The GAO implied that, had larger maneuver elements been included, they could have functioned as opposing forces to stimulate tactical training. (pp. 2-3, pp. 17-18/GAO Draft Report)

DOD RESPONSE: The DoD partially concurs. Opposing force play was limited to rear area operations by Special Forces teams. These special forces teams concentrated their efforts against fire support units simulating a combat environment using small elements. The special forces rear area type operations were considered extremely effective and provided the fire support units with realistic tactical combat training. The inclusion of large opposing force units would have been incompatible with the Army and Air Force live fire training. The Army is limited in its ability to realistically exercise divisions and corps in accordance with Air Land Battle Doctrine.

o FINDING H: Weaknesses in Planning and Execution: The Exercise Was Lacking in Tactical Realism. The GAO found that FIREX '88 could have provided more realistic training by incorporating battlefield simulation. The GAO pointed out that Corps level and higher planners have the expertise to design exercise scenarios that would have required units to establish or simulate proper defensive positions, emplace wire and other obstacles, correctly position machine guns

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and other weapons, develop reaction plans, and practice nuclear, biological and chemical defenses. The GAO concluded that these types of activities could have been conducted without compromising exercise control or safety. (pp. 2-3, pp. 17-19/GAO Draft Report)

DOD RESPONSE: The DoD partially concurs. Army units should train under realistic conditions when feasible. Environmental limitations within training areas sometimes preclude total wartime simulation. For example, FIREX '88 was conducted on Bureau of Land Management terrain. Realistic perimeters could not be constructed because the Bureau of Land Management prohibits extensive digging due to environmental concerns. During FIREX '88 the average temperature was over 100 degrees Fahrenheit. The Army policy calls for extensive acclimation before soldiers are to wear full MOPP gear.

o FINDING I: Weaknesses in Planning and Execution: Some Units Were Required To Support FIREX '88 Administratively And Received Little Or No Tactical Training. The GAO found a number of units that selected to support FIREX '88 administratively and were not included in the exercise play. The GAO concluded that these units received no significant wartime mission training. For example, the GAO pointed out that combat engineer units were used to prepare roads and other facilities prior to and after the exercise instead of

Now on pp. 18-19.

performing these functions as part of the exercise scenario. The GAO also noted that, except for attack helicopter elements, Army combat aviation units were used primarily to transport visitors and observers, instead of taking part in tactical play. In addition, the GAO observed that ammunition and fuel resupply was conducted under administrative rather than tactical conditions. (pp. 2-3, pp. 20-21/GAO Draft Report)

DOD RESPONSE: The DoD concurs. Combat engineer units did prepare roads and other facilities before the exercise. Maneuver damage was repaired after the exercise. These are essential functions which could not be accomplished during the exercise.

Now on pp. 2, 22-23.

o FINDING J: FIREX '88 Exercise Costs. The GAO observed that FIREX '88 was not centrally funded by the Army; instead, funds were provided from a number of sources, such as the National Guard Bureau, Office of the Chief, Army Reserve, I Corps, and individual units. The GAO found that many units not only used FIREX '88 as their annual training period and used annual training money already provided to finance their participation in the exercise. The GAO explained that additional costs, such as those incurred for travel, transportation, and ammunition, were not accumulated by all participants and therefore, the GAO could not perform an analysis of exercise costs versus benefits. (pp. 2-3, pp. 22-23/GAO Draft Report)

DOD RESPONSE: The DoD concurs. The Army followed standard budget procedures for funding FIREX 88. It is not a normal procedure to centrally accumulate total costs on integrated exercises.

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RECOMMENDATIONS

- o None

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**GAO Comments**

The following are GAO's comments on the Department of Defense's letter dated July 11, 1989:

1. We have modified the report based on agency comments.
2. We have revised the report to clarify that, while exercise participants were able to communicate, they had problems in doing so.
3. We agree with DOD's comment that a corps artillery does not directly respond to fire missions originating from maneuver elements, and we have changed the report accordingly.

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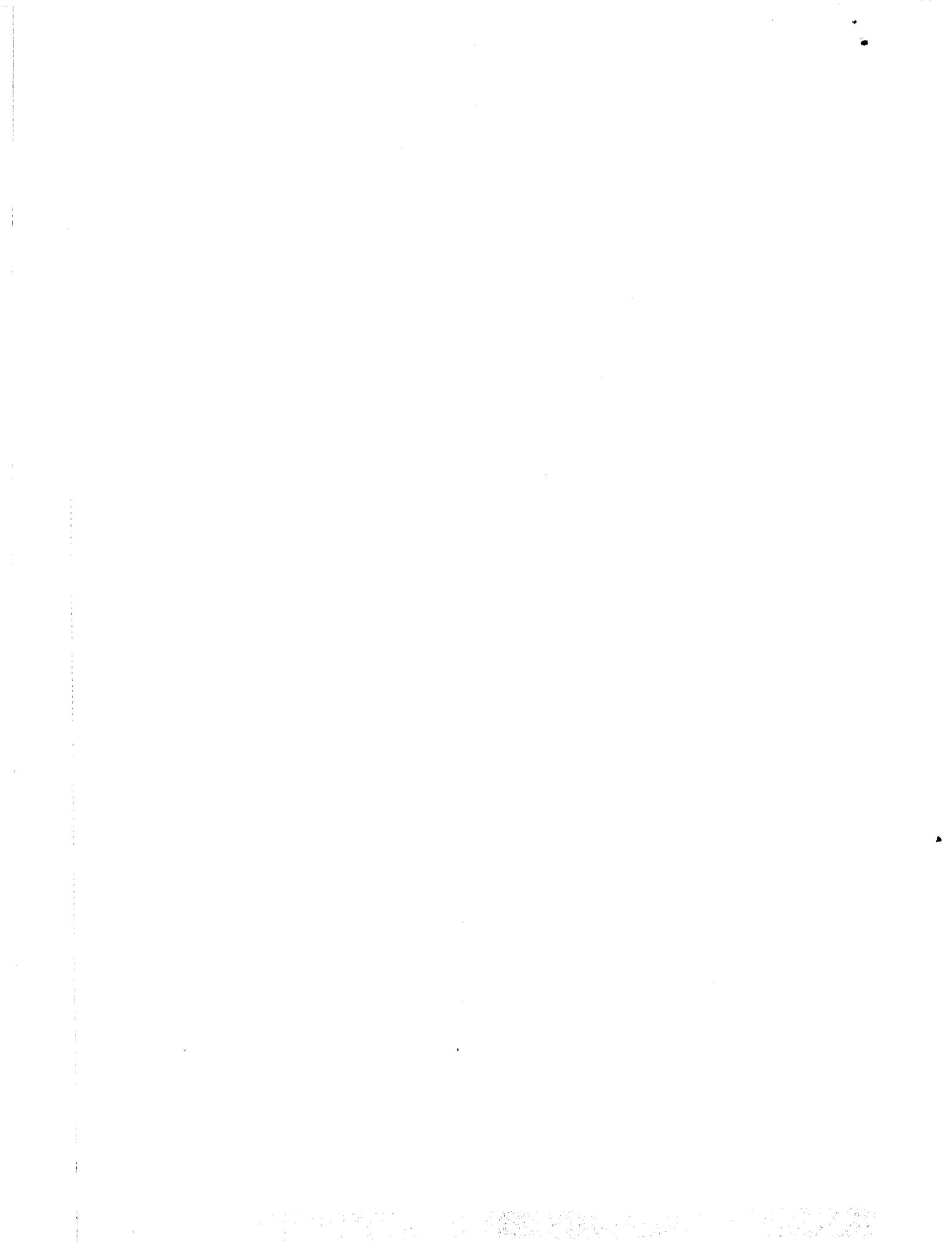
# Glossary

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<b>Corps</b>	A tactical unit larger than a division and smaller than a field army. A corps usually consists of two or more divisions together with auxiliary combat arms and services such as corps artillery, corps support command, corps air defense, aviation, engineer, intelligence, and military police.
<b>Corps Support Command</b>	A unit that provides combat-service support to operating forces of the corps. Combat-service support includes administration, finance, food, graves registration, health, laundry, legal, maintenance, supply, and transportation services.
<b>Division</b>	A major tactical unit consisting of brigades and combining the necessary combat arms and services required for sustained combat. It is smaller than a corps.
<b>Brigade</b>	A tactical unit smaller than a division and consisting of battalions and smaller units tailored to meet anticipated requirements.
<b>Battalion</b>	A tactical unit composed of a headquarters and two or more batteries or companies.
<b>Battery</b>	A tactical artillery unit corresponding to a company in other branches of the Army.
<b>Company</b>	The basic tactical unit in most combat arms and services of the Army.

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